# PROJECT PROPOSAL SEMESTER 8

# DESIGN WEB APPLICATION TRAIN SCHEDULE

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**This Report is Prepared to Fulfill the Requirement of CPP400 – Project Proposal**

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**SEMESTER 8**

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By completing this project proposal, I came to know many new pieces of knowledge in different aspects. It has become part of my experience in life. I will make good use of this knowledge in the future to support and guide others who need my assistance.

## ABSTRACT

The development of technology, especially computers at this time has a very important role in life in society. Technology that develops according to the demands of the times expected to be a supporting tool to deal with the problems that arise is lack new information that is easily accessible to improve the quality of community insight.

And also, with the increased use of public transportation such as traines, for example, the author tries to design and develop an online tracking train web application. This website is expected to provide information about train destination, train departure, train arrival times, and train ticket prices more quickly and accurately in various layers of society with ease to meet the needs of information in various layers of society today.

This website will be made using HTML, CSS, JavaScript, Bootstrap, jQuery, and Firebase. This website is designed in such a way as to attract visitors in obtaining information more train quickly and accurately and interestingly. This site is a dynamic website, it means that the information provided is subject to change at any time based on the current trend and situation. It also includes a wealth of information and is quite challenging to develop and maintain.

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# CHAPTER 1

# INTRODUCTION

A train is a mode of transportation in the form of a vehicle with motion power that may travel alone or in conjunction with other vehicles that travel on tracks. Train typically include of a locomotive propelled by human force known as a machinist and powered by an engine, as well as a number of  or carriages used to move goods and/or people. The train or carriages are rather enormous in size, allowing them to load passengers or cargo on a massive scale. Because of its effectiveness as a mass transit mode, some governments are attempting to maximize its usage as the primary mode of land transportation inside cities, between cities, and across countries.

This website is made using HTML, CSS, JavaScript, Bootstrap, jQuery, and Firebase. Based on the background, the idea was sparked to choose the title “Design Web Application Train Schedule Tracking”.

## 1.1 Problem Statement

Visitors to this page can get information and train timetables on this website. This website also has an admin login area to assist in providing the most recent updates. For the issues discussed not to deviate from the objective, it is necessary to create a limit of the problem, there are:

1. Design the Prototype of the Website to make it User-Friendly.

2. Execution of the Web Development using various kinds of information obtained from observations.

3. The Website is Designed using HTML, CSS, JavaScript, Bootstrap, jQuery, and Firebase.

## 1.2 Objectives

The purpose of the research conducted is:

1. Developing a Dynamic Website that is used to provide various information about train easily and faster.

2. Opening the Insights of the Internet Users so that they will be able to Utilize the Existing Resources.

## 1.3 System Scope

### 1. Method of Observation

The author makes observations and surveys what the website should look like when it is done.

### 2. Programming Language Research

This step is done by the author by researching the best programming language to use when developing the website.

### 3. Library Review

Web scripting that is client side will produce a static web page, meaning more emphasis on the design of the information display format. HTML is a language for client-side web scripting that allows displaying information in the form of text, graphics, as well as multimedia and also a connection between web page displays.

In web-based programming techniques also undergo significant changes, the author is using firebase as the database because it also includes hosting at the database itself is easy to develop and maintain.

## 1.4 Target User

Design online train schedule tracking website is an online publication tool for internet users that are read all over the globe.

## 1.5 Project Timeline

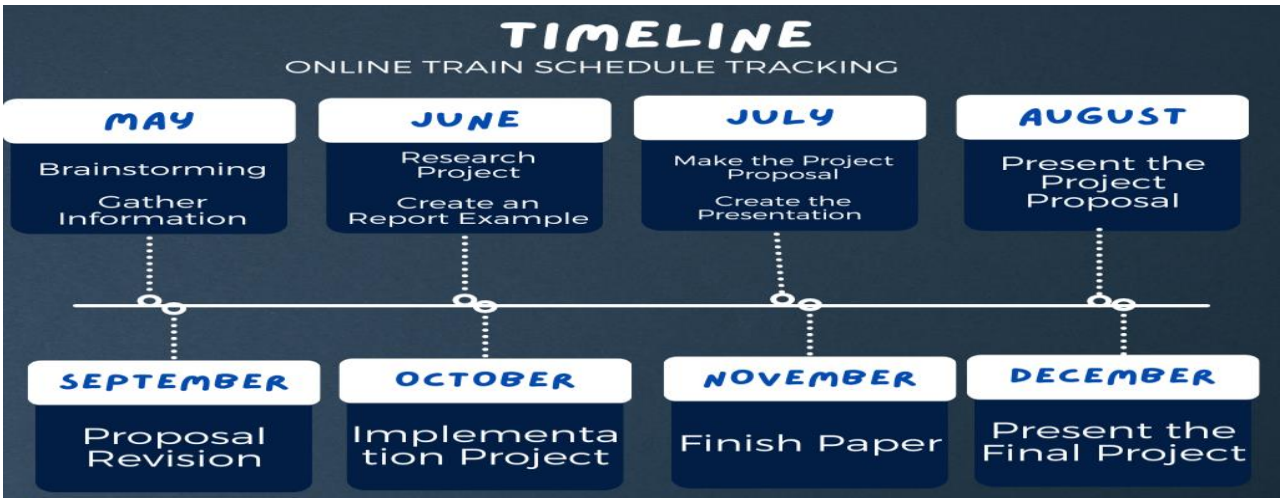



*Figure 1.1 Project Timeline*

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 Introduction

Organizations all around the globe come in the arena of global competitiveness by utilizing the most complete and modern technology characteristics. The most prevalent use of innovation is in information technology and communication. Various sectors use technology and software and internet improvements to manage and monitor their traininess transactions. The aviation traininess, rail industry, and automobile industry are the most widely employed systems in the use of informative systems.

The proposed system will make tracking schedule easier, preserve customer records, give an online menu with train timetables, rail destinations, rates, and alternative payment methods, and include a page dedicated to customer concerns and responses. Reservation cancellation, individual seat reservations, courses, and other administrative difficulties are not supported by the system.

## 2.2 Review of the Existing System

The existing system is manual. It requires a lot of file work to be done. It is a timeconsuming system. All of the data on the website is maintained manually. There is no way of spreading the information so fast and cheaply. In the previous system, all of the information does not get in one place.

### 2.2.1 Online Tracking System

This system let the admin publish train departure and train arrival times It also allows user to interact directly with the customer service by contacting us by email that is displayed in the web application.

**The benefits of an online Tracking system are:**

1. It simplifies the process of optimizing the web for search engines.

2. It will attract visitors and will gain their trust and respect.

3. It allows and encourages constant engagement with the users.

4. Make it easier for train users to get the train schedule they will use.

### 2.2.2 Open-Source System

Open-source is code that is intended to be publicly available, meaning that anybody can view, alter, and distribute it as they see fit. Peer review and community production are used to build open-source systems in a decentralized and collaborative manner.

Because it is produced by communities rather than a single author or firm, open-source software is frequently less expensive, more flexible, and has a longer lifespan than proprietary software. Open source has evolved into a movement and a way of life that extends beyond software development. The open-source movement leverages open-source system principles and decentralized production style to find innovative solutions to solve issues in their communities and industries.

The benefits of an open-source system are:

1. Open-source projects can be pulled from public repositories and used immediately.

2. Developers are more apt to write better code knowing other experts are going to be looking at their code and reviewing it.

3. I do not need to use procurement overhead to manage license renewals. It is highly beneficial to enterprises to save a budget on software to utilize elsewhere.

# CHAPTER 3

# SYSTEM ANALYSIS

The author has chosen to use DevOps and the prototyping method. This type of system is based on their degree of independence. The reason for choosing DevOps is because the premise of DevOps is to bring development teams together with operational teams to streamline delivery and support.

## 3.1 System Development Process

Users can utilize the system-development life cycle to turn a freshly designed project into an operating one. Any project's life cycle strategy is a time-consuming procedure. Even though certain stages are more difficult than others, none should be skipped. An oversight might prevent the entire system from working properly.

### 3.1.1 Project Planning and Oversight

#### Planning

**a.** Identify the Goal of the Project

To create a convenient Tracking train schedule and to improve the weakness of the existing system, such as providing enhance page loading speed.

**b.** Plan for the Project Features and Expected Result

Plan the function of the Tracking train schedule website and how the system carries out these functions in the expected result.

**c.** Identify the User Group

We can plan and include the dedicated features in the system to improve the user experience.

**d.** Identify the Existing Problem

It is needed so that we can plan for counter solutions to resolve the existing problems.

**e.** Identify the Constraints and Requirements of the System

To understand more we need to identify the constraints and requirements of the system.

## Analysis

**a.** Identify the Advantage and Disadvantages of the System

Analysis of the advantage and disadvantages of the project. Improve the disadvantage and highlight the advantage of the system.

**b.** Goal Analysis

To identify the task and decision required to achieve the goal. Such as the skills required to develop the project, the software, and the hard required to develop the project.

**c.** Review Existing Systems

The reason behind this is to make a comparison with the existing systems and understand what the website is lacking and what should include in the website to improve the overall performance.

**d.** System Analysis

To study the system to identify the process, model, and overall objective. Also, to solve and improve the system work efficiently to achieve the goals.

## Design

**a.** System User Interface Design

To design the system user interface at the best convenience for users to improve user experience.

**b.** System Flow Chart Design

An important tool for the improvement of the processes and understanding of the relationships among the various steps.

**c.** System Entity Relationship Diagram Design

To understand the relationship between each entity and attributes of the website to ensure the website developed correctly alogically.

**d.** System Context Diagram Design

To clarify the website's boundaries and identify the information flow between the website and the external entities.

## 3.2. System Modelling

Design the system to begin development, outlining the system model as needed. The use of complex system modeling makes it simple to comprehend information from the web application. The model of online tracking schedule train web application system is depicted or described below:

### 3.2.1 Process Modelling

Describes how the online tracking schedule train operates and illustrates what it does and its data activities.

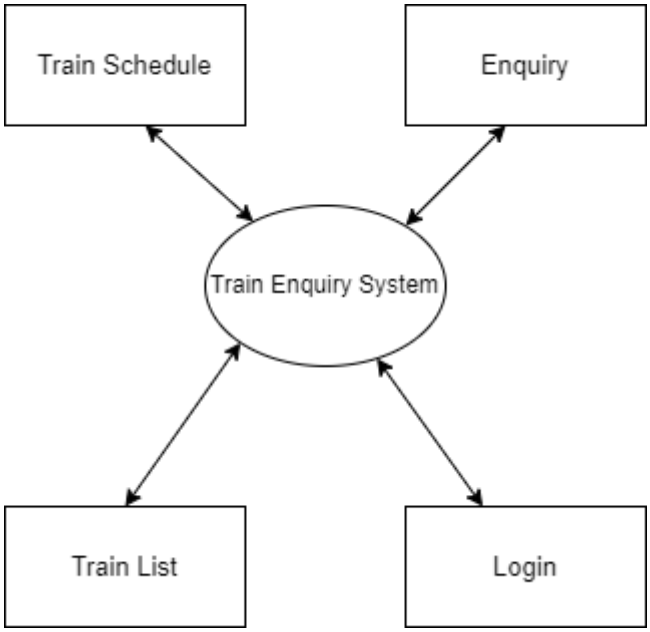



*Figure 3.2.1 DFD 0*

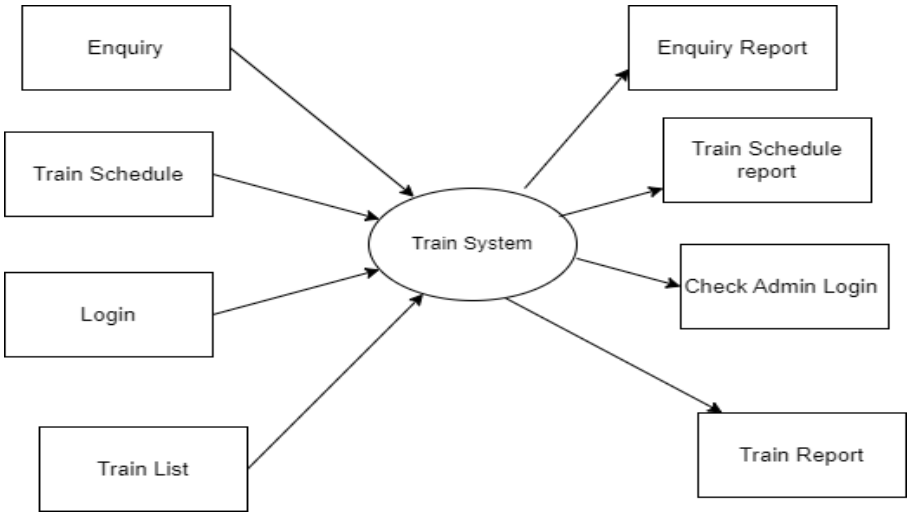



*Figure 3.2.2 DFD Level 1*

### 3.2.2 Logical Modelling

The flow of the online tracking schedule train is created by the structure of the community blog and the connection between the sections.

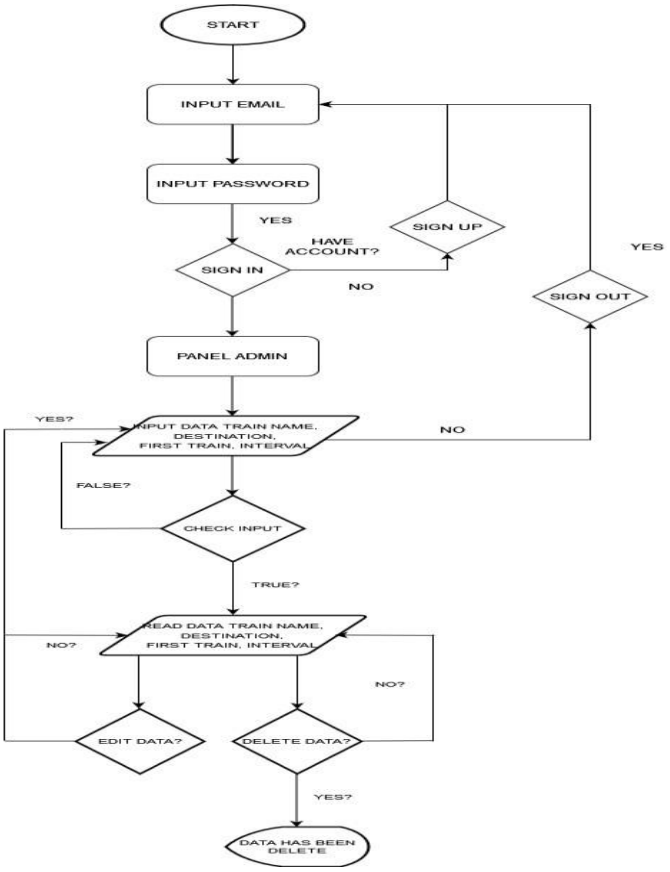



*Figure 3.2.4 Flowchart*

### 3.3.2 Data Modelling

The schema explains the link between the information stored in the database, resulting in the creation of a technique for storing information in the database.

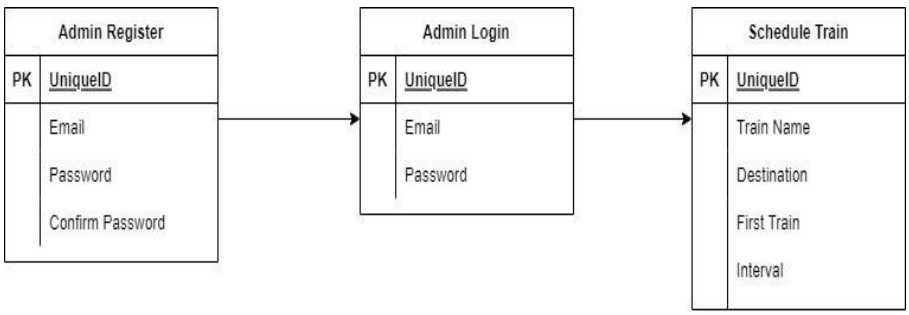



*Figure 3.2.5 ERD*

# CHAPTER 4

# SYSTEM DESIGN

System Design is a procedure performed to complete the design of the existing system in the approved design document, test the system, install, and start a new, repaired system. The steps needed in implementing the system are:

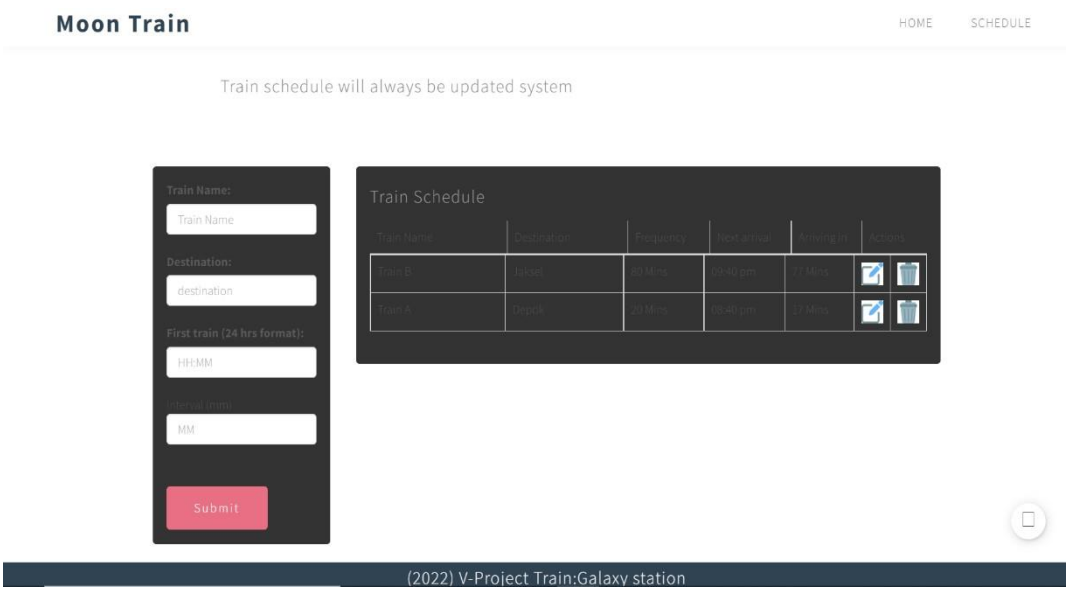
1. Get the right software and hardware to make the application you want to design.

2. Completing the system design.

3. Writing, testing, controlling, and documenting applications.

## 4.1 Design Forms and Report


(LoginPage Admin)




(Form CRUD Admin)

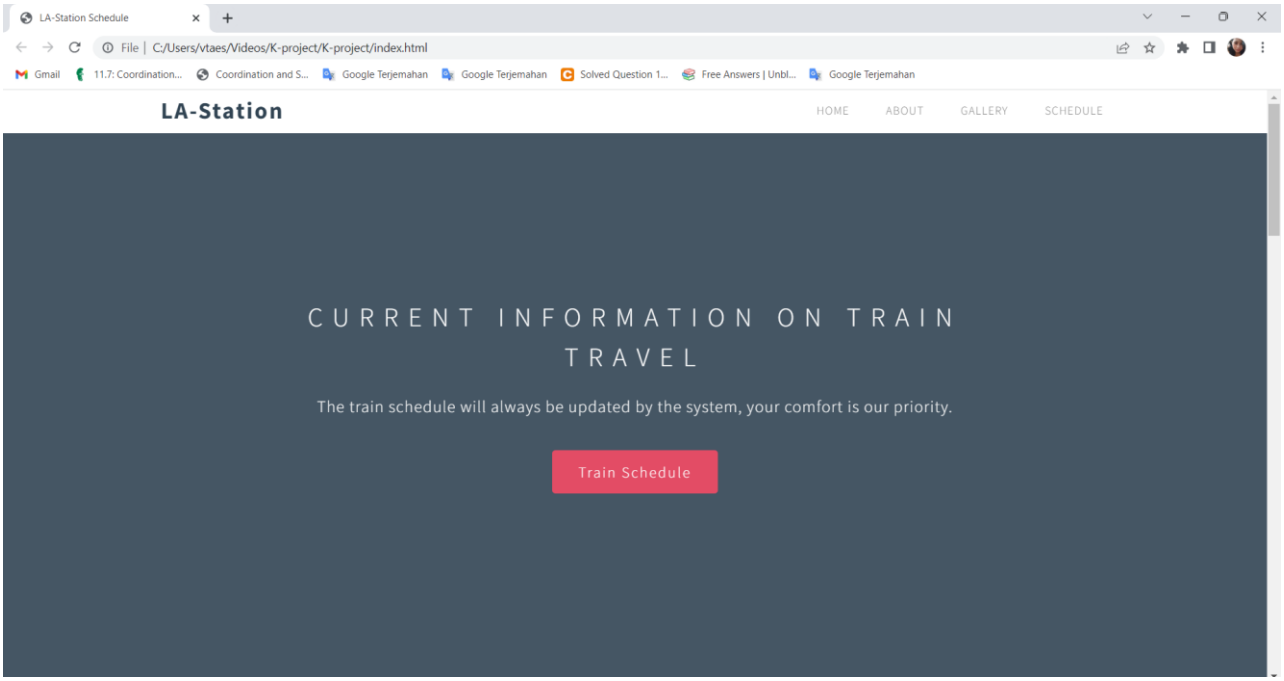

(Train Schedule User)

# CHAPTER 5

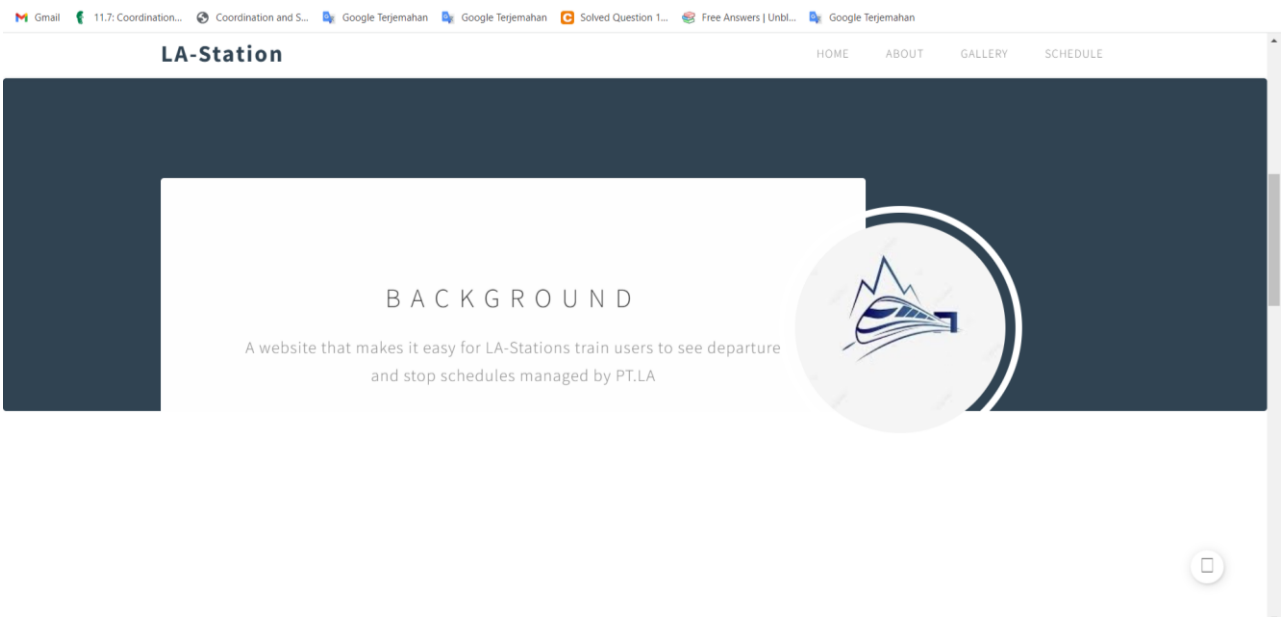
# IMPLEMENTATION AND TESTING

## 5.1 Project Implementation

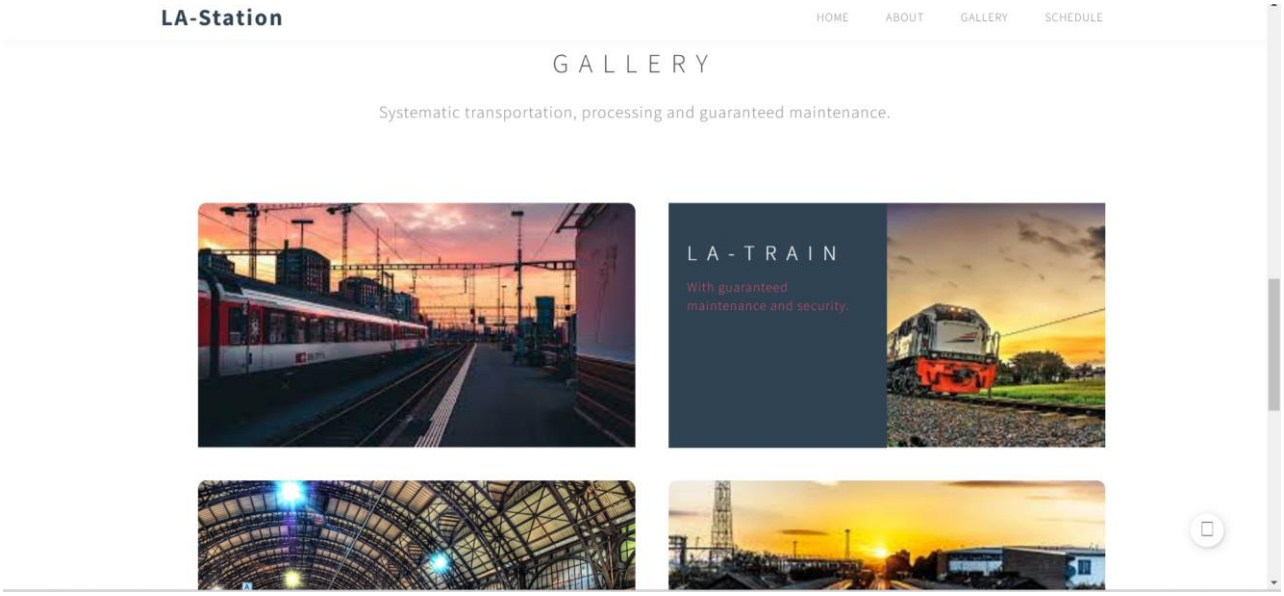
This website is a landing page website about train schedule.



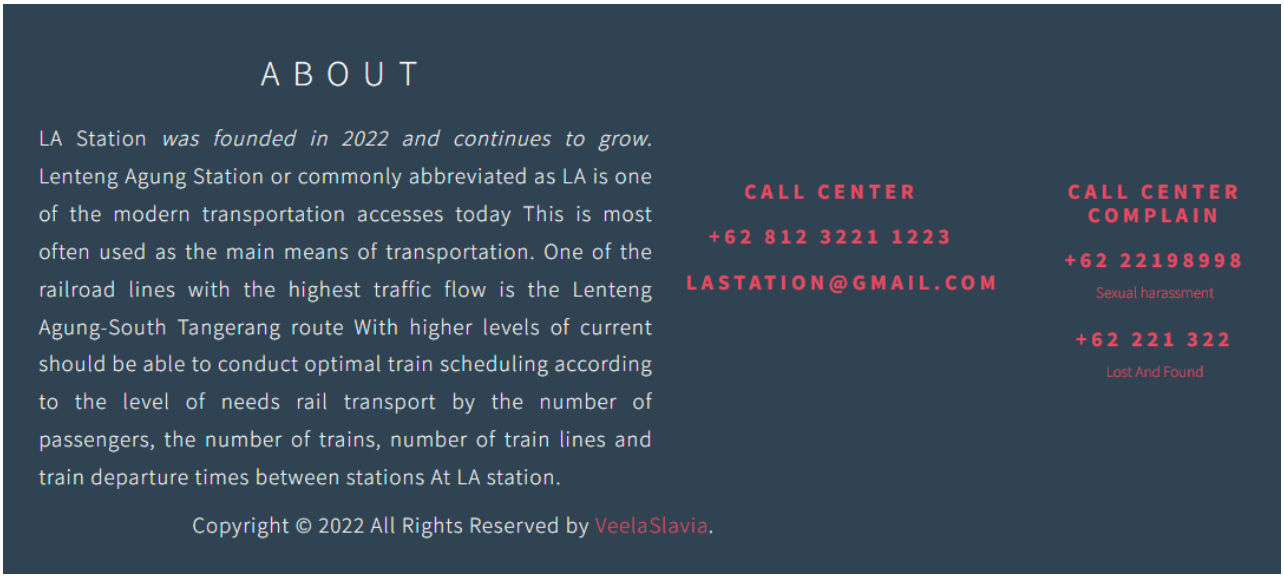

(Homepage displays jumbotron)



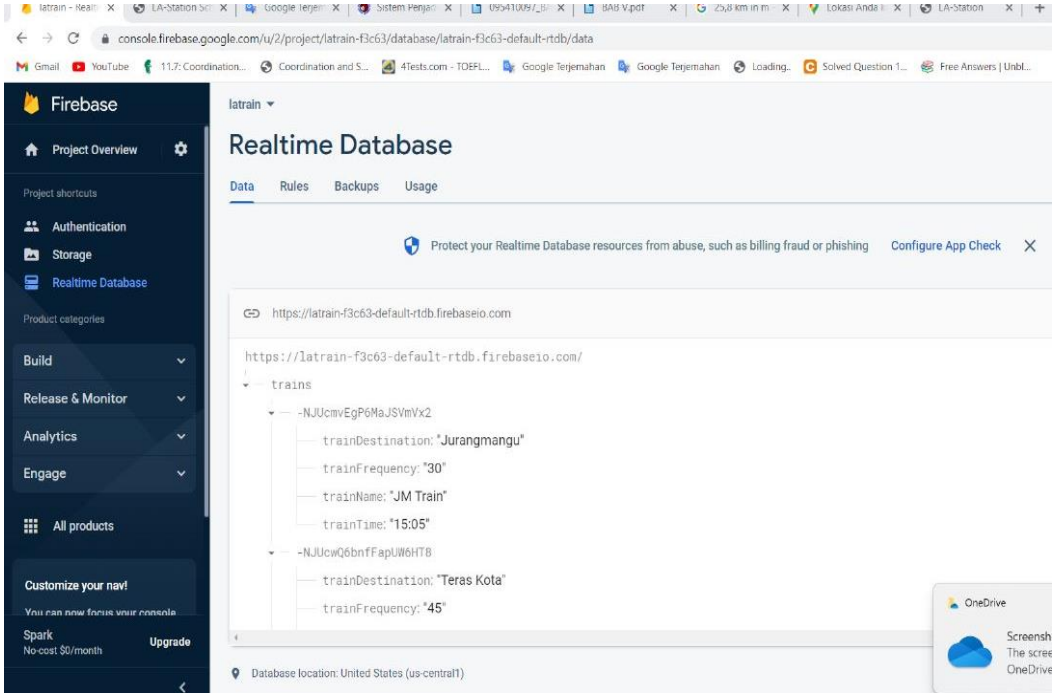

(Aboutpage displays the background of the LA station website development)




(Gallerypage displays the facility that LA station provides)




(Footer section gives the address and contact of LA station)




(Database of the data train schedule)

## 5.2 Project Testing

Blackbox testing is a testing method to test the application about the details of implementation, how it works, and operation system.

| | Test Case | Expected Output | Actual | Criteria |
|---|---|---|---|---|
| 1 | Admin and user open the program | The program should open | Successfully open the program | PASS |
| 2 | Admin input username and password in Login form to open the admin page | After fill the form and login the admin page should open<br>If wrong email or password will display alert The password is invalid or the user does not have a password. | Successfully open the program | PASS |
| 3 | Admin fill the form of train schedule | Admin fill the data. The form should read the data | Succesfully Read data | PASS |
| 4 | Admin can edit form train schedule | edited data can be displayed | Succesfully edit data | PASS |
| 5 | Admin can delete the form train schedule | deleted data has been deleted | Succesfully delete data | PASS |
| 6 | User can read the train schedule | Schedule page display the train schedule | Succesfully read data | PASS |

| | | | | |
|---|---|---|---|---|
| 7 | User can click the call center | Redirect to a phone call | Succesfully call the call center | PASS |

# CHAPTER 6
# CONLUSION

Lenteng Agung Station or commonly abbreviated as LA is one of the modern transportation accesses today. It is most often used as the main means of transportation. One of the railroad lines with the highest traffic flow is the Lenteng Agung-South Tangerang route With higher levels of current should be able to conduct optimal train scheduling according to the level of rail transport needs by the number of passengers, the number of trains, number of train lines and train departure times between stations At LA station

optimal train scheduling according to the level of need can display train schedule information ,the train scheduling process that is carried out is still manual in nature, there is no system that can determine optimal train scheduling.

All train scheduling processes are still done manually. Any upcoming trains or depart from one station to the destination station had several stops. Stopovers this is often a very risky thing for officers to arrange the scheduling of train operations to find out the kilometers traveled and what information is along the track that will be passed by each railroad